



Quanterra
2800 George Washington Way
Richland, Washington 99352-1613

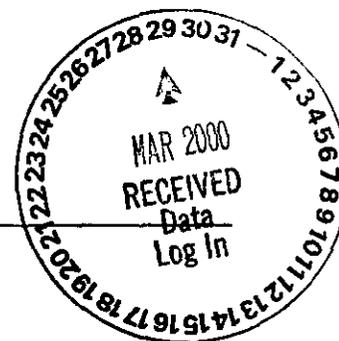
0053043

509 375-3131 Telephone
509 375-5590 Fax

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

RECEIVED
APR 25 2000



March 22, 2000

Attention: Joan Kessner

EDMC

SAF Number : B99-023
Date SDG Closed : February 28, 2000
Number of Samples : Three (3)
Sample Type : Water
SDG Number : W03076
Data Deliverable : 45 Day / Summary

I. Introduction

On February 14, 2000, three water samples were received at STL Richland (STLR) for chemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
9D8JAA10	B0XKH3	WATER	2/14/00
9D8JAC10	B0XKH4	WATER	2/14/00
9D8JAE10	B0XKH5	WATER	2/14/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analysis was:

Chemical Analyses
Chromium Hex by EPA method 7196

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III. Quality Control

The analytical results for each analysis performed under SDG W03076 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

Quality control sample results are reported in mg/L.

IV. Comments

Chemical Analyses

Chromium Hex by EPA method 7196:

The LCS, batch blank, sample, sample duplicate (B0XKH3) and sample matrix spike/matrix spike duplicate (B0XKH3) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:



Jackie Waddell
Project Manager

SAMPLE RESULTS

LAB NAME: QUANTERRA, Richland **SDG: /RPT GRP:** W03076 / 10133
LAB SAMPLE ID: 9D8JAA10 **MATRIX:** WATER
CLIENT ID: BOXKH3 **DATE RECEIVED:** 2/14/2000 12:18:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	5.10E-02		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results:

SAMPLE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03076 / 10133
LAB SAMPLE ID: 9D8JAC10 MATRIX: WATER
CLIENT ID: B0XKH4 DATE RECEIVED: 2/14/2000 12:18:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	1.10E-02		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results:

SAMPLE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03076 / 10133
LAB SAMPLE ID: 9D8JAE10 MATRIX: WATER
CLIENT ID: B0XKH5 DATE RECEIVED: 2/14/2000 12:18:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	2.00E-03	U	N/A	N/A	2.00E-03	mg/L	N/A	EPA7198

Number of Results:

DUPLICATE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03076 / 10133
LAB SAMPLE ID: D8JAA14R MATRIX: WATER
CLIENT ID: BOXKH3 DATE RECEIVED: 2/14/2000 12:18:00
ORIG LAB SAMPLE ID: 9D8JAA10

ANALYTE	DUP RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
HEXCHROME	5.30E-02		N/A	N/A	2.00E-03	mg/L	N/A	EPA7196	5.10E-02	3.85%

Number of Results:

BLANK RESULTS

LAB NAME: QUANTERRA, Richland SDG /RPT GRP: W03076 / 10133
LAB SAMPLE ID: D8JKT11B MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
HEXCHROME	0.00E+00	U	N/A	N/A	2.00E-03	mg/L	N/A	EPA7196

Number of Results:

LABORATORY CONTROL SAMPLE

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03076 / 10133
LAB SAMPLE ID: D8JKT12S MATRIX: WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	MDA/ IDL	REPORT UNIT	YIELD	EXPECTED	RECOVERY
HEXCHROME	4.86E-01		N/A	N/A	2.00E-03	mg/L	N/A	5.00E-01	97.20%

Number of Results:

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03076 / 10133
LAB SAMPLE ID: D8JAA12W MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
HEXCHROME	5.47E-01	N/A	N/A	2.00E-03	mg/L	5.10E-02	5.26E-01	103.99%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detects

(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.

MATRIX SPIKE RESULTS

LAB NAME: QUANTERRA, Richland SDG: /RPT GRP: W03076 / 10133
LAB SAMPLE ID: D8JAA13W MATRIX: WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	SAMPLE RESULT	EXPECTED	RECOVERY
HEXCHROME	5.43E-01	N/A	N/A	2.00E-03	mg/L	5.10E-02	5.26E-01	103.23%

Number of Results:

*Spike Result Corrected For Sample Result

Result = IDL When Not Detected
(Q)ualifiers: U = Analyte result < MDA/IDL,
J = No U qualifier and result < RDL.



Richland Laboratory
Data Review Check List
METALS

Work Order Number(s): <i>D8JAA, D8JAC, D8JAE Batch 0045449 Lot JOB140140</i>				
Lab Sample Numbers or SDG: <i>W03076</i>				
Method/Test/Parameter: <i>CR+L in water RICHWC5003 R.4</i>				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			
2. Correlation coefficient within QC limits?	✓			
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters \leq reporting limit?	✓			
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			
2. CCB analyzed at required frequency and all results \leq reporting limit?	✓			
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?			✓	
2. Were all sample holding times met?	✓			
D. QC Samples				
1. All results for the preparation blank below limits?	✓			
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			
4. Analytical spikes within QC limits where applicable?			✓	
5. ICP only: One serial dilution performed per SDG?			✓	
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	

CHAIN OF CUSTODY

Q-27023

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B99-023-21	Page 1 of 1
Collector Nielson/Winterrose/Johansen		Company Contact W McMahon	Telephone No. 375-9434	Project Coordinator TRENT, SJ	Price Code 7N	Data Turnaround 45 Days
Project Designation 100-HR-3 Treatment System - Operational Sampling		Sampling Location 100HR-3		SAF No. B99-023	Air Quality <input type="checkbox"/>	
Ice Chest No. ERC99-074		Field Logbook No. EL 1381-3	COA R10HR3C560	Method of Shipment Hand Delivered		
Shipped To Quanterra Incorporated		Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A		

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	Cool 4C																		
	Type of Container	P																		
	No. of Container(s)	1																		
	Special Handling and/or Storage	Volume	500mL																	
SDG SAMPLE ANALYSIS W03076 JOB140140		Chromium Hex - 7196																		
Sample No.	Matrix *	Sample Date	Sample Time																	
BOXKH3 DBJAA	Water	2/14/00	0920	X																
BOXKH4 DBJAC	Water	2/14/00	0931	X																
BOXKH5 DBJAE	Water	2/14/00	0936	X																

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *
Relinquished By	Date/Time	Received By	Date/Time	** Cr VI holding times MUST BE MET. Sample Management must be contacted immediately if they are missed.				S=Soil SE=Scudiment SO=Solid S=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other
Relinquished By	Date/Time	Received By	Date/Time	** The ERC Contractor acknowledges that the holding time for off-site analyses of NO3 may be exceeded.				
Relinquished By	Date/Time	Received By	Date/Time					
Relinquished By	Date/Time	Received By	Date/Time					
Relinquished By	Date/Time	Received By	Date/Time					
				less than 2000 pci/gm				

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

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Figure 1

SAMPLE CHECK-IN LIST

Date/Time Received: 2-14-00, 2:18 SG#: W03076
Work Order Number: JOB1401.40 SAF #: B99-023
Shipping Container ID: ERC99074 Chain of Custody #: B99-023-21

- 1. Custody Seals on shipping container intact? Yes [] No []
- 2. Custody Seals dated and signed? Yes [] No []
- 3. Chain-of-Custody record present? Yes [] No []
- 4. Cooler temperature 4°C
- 5. Vermiculite/packing materials is Wet [] Dry []
- 6. Number of samples in shipping container: 3
- 7. Sample holding times exceeded? Yes [] No []

8.	Samples have:	<input checked="" type="checkbox"/> tape	<input type="checkbox"/> hazard labels	<input type="checkbox"/> appropriate sample labels
		<input checked="" type="checkbox"/> custody seals		

9.	Samples are:	<input checked="" type="checkbox"/> in good condition	<input type="checkbox"/> leaking	<input type="checkbox"/> have air bubbles
		<input type="checkbox"/> broken		

- 10. Where any anomalies identified in sample receipt? Yes [] No []
- 11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: [Signature] Date: 2-14-00
Telephoned To: _____ On _____ By _____

RQC050

Quanterra Incorporated
WET CHEM BATCHSHEET
Richland

Run Date: 2/14/00
Time: 17:39:35

PRODUCTION FIGURES - WET CHEM

TOTAL NUMBER	SAMPLE NUMBER	QC	RE-RUN MATRIX	RE-RUN OTHER	MISC NUMBER	TOTAL HOURS	EXPANDED DELIVERABLE
METHOD: EA Hexavalent Chromium 6A)							
QC BATCH #: 0045449			INITIALS: _____			DATA ENTRY: _____	
PREP DATE: 2/14/00			PREP _____			INITIALS _____	
USER: ROSSR			ANAL _____			DATE _____	

Work Order	Lab Number	Structured Analysis	Exp. Del.	Analysis Date	Sample ID:
D8JKT-1-01	J-0B140000-449-B	XX I 88 EA 5I		_____	INTRA-LAB BLANK
D8JKT-1-02	J-0B140000-449-C	XX I 88 EA 5I		_____	INTRA-LAB CHECK
D8JAA-1-01	J-0B140140-001	XX I 88 EA 5I		_____	BOXKH3
D8JAA-1-03	J-0B140140-001-D	XX I 88 EA 5I		_____	BOXKH3
D8JAA-1-02	J-0B140140-001-S	XX I 88 EA 5I		_____	BOXKH3
D8JAA-1-04	J-0B140140-001-X	XX I 88 EA 5I		_____	BOXKH3 DUP
D8JAC-1-01	J-0B140140-002	XX I 88 EA 5I		_____	BOXKH4
D8JAE-1-01	J-0B140140-003	XX I 88 EA 5I		_____	BOXKH5

Control Limits

(85-115)
(85-115)
(85-115)

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COC Signature Page

Lot or Batch #:	Initials/Date	Procedure #
Released By	<i>[Signature]</i> 2-16-07	<i>[Signature]</i>
Received	<i>[Signature]</i> 2-15-00	RICHTW 5203 R Y
Released By	<i>[Signature]</i> 2-15-00	n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		
Released By		n/a
Received		